

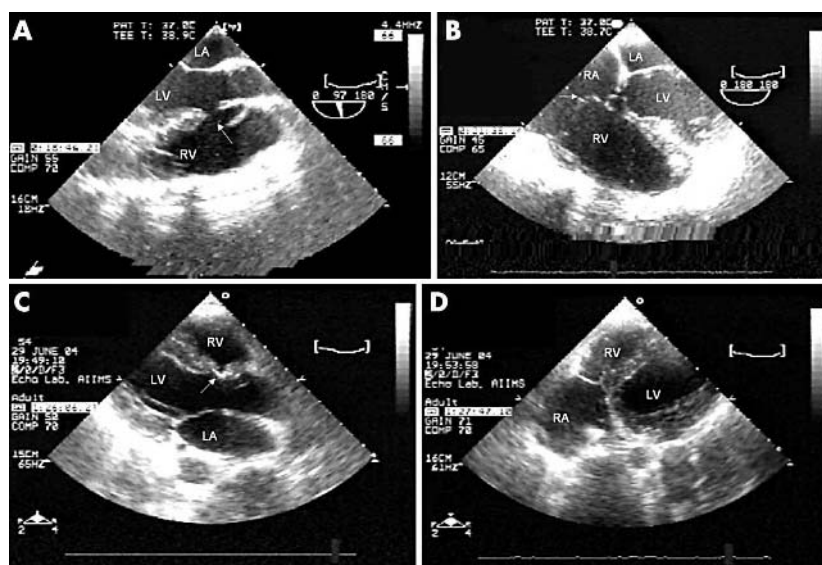
## IMAGES IN CARDIOLOGY .....

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## Traumatic ventricular septal defect and tricuspid regurgitation

A 32 year male patient presented with complaints of chest pain and dyspnoea on exertion. He had sustained blunt trauma to the anterior chest wall after falling down from a motorcycle 3 years earlier. There was a systolic murmur during his initial evaluation after the accident. However, the patient refrained from undergoing further investigations. During the past 3 months he developed recurrent episodes of paroxysmal palpitations and his symptoms worsened. On clinical examination the pulse was 86 beats per minute, blood pressure was 130/76 mm Hg, and jugular venous pressure was elevated and showed prominent V waves with accentuated Y descent. The precordium revealed prominent pulsations with a systolic thrill. He was found to have a 4/6 harsh systolic murmur radiating across the sternum.

Chest x ray showed cardiomegaly (cardiothoracic ratio of 0.62) with right atrial enlargement and evidence of increased pulmonary blood flow. Electrocardiogram showed right bundle branch block with right axis deviation. Echocardiographic examination showed a ventricular septal defect in the perimembranous location with ragged margins. Anterior tricuspid leaflet was prolapsing with non-coaptation causing severe tricuspid incompetence with a regurgitant velocity of 2.8 M/s. Cardiac catheterisation revealed elevated right atrial pressures (RA mean 16 mmHg with tall v waves of 24–26 mm Hg), mild pulmonary arterial hypertension, and mild pulmonary venous



(A) Transoesophageal echocardiogram showing the ventricular septal defect with its ragged margin (arrow). (B) Transoesophageal echocardiogram showing the prolapsing tricuspid valve leaflet (arrow). (C) Transthoracic echocardiogram showing patch repair (arrow) of the ventricular septal defect. (D) Transthoracic echocardiogram showing repaired tricuspid valve. LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle.

hypertension. The ratio of left to right shunt was 5.35:1. Angiocardiogram in the left anterior oblique view with cranial tilt showed a perimembranous ventricular septal defect (VSD).

He underwent surgery, during which an interoperative transoesophageal echocardiogram confirmed the pre-operative findings (panels A and B). At surgery there was a 2 cm×2 cm perimembranous VSD with bifid muscular septum and redundant tricuspid leaflet

prolapsing near the antero-septal commissure. The VSD was closed with a Dacron patch through the right atrial approach and primary repair of the tricuspid valve was done. At follow up after 1 month the patient was asymptomatic.

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